

ABSTRACT

A fuel injector having a nozzle with improved cooling including a retainer and a nozzle housing received therein. The nozzle housing includes a nozzle shank, an outer peripheral surface and at least one injection hole at a tip of the nozzle shank. The nozzle shank is positioned in a nozzle support portion of the retainer. In one embodiment, the outer peripheral surface of the nozzle shank is tapered, and the inner peripheral surface of the nozzle support portion is correspondingly tapered and sized to engage the outer peripheral surface of the nozzle shank along a tapered interface. In another embodiment, the inner peripheral surface of the nozzle support portion has a diameter smaller than a diameter of the outer peripheral surface of the nozzle shank so that an interference fit exists at a seal interface. In yet another embodiment, a nozzle seal seals an interface between the inner peripheral surface of the retainer and the outer peripheral surface of the nozzle shank to thereby prevent entry of hot gases into the interface. In another embodiment, the nozzle support portion is provided on a nozzle sleeve.